

Phonophoresis

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Introduction :-

Phono means sound and phoresis means migration of the ions through a membrane by the action of an electric current.

Phonophoresis is defined as the movement of the drugs through skin into the subcutaneous tissues under the influence of ultrasound. It is otherwise called as sonophoresis or ultrasonophoresis.

Principle

Phonophoresis relies on perturbation of the tissue causing more rapid particle movement

and thus encouraging absorption of the drug.

Effects of Phonophoresis

The thermal effects of ultrasonic increase tissue permeability and the acoustic pressure created by the ultrasonic beam drives the medication into the tissues. Thus, the medication follows the path of beam. Both pulsed and continuous ultrasonic have been used in phonophoresis.

Continuous ultrasonic at an intensity great enough to produce thermal effects may induce a proinflammatory response.

If the goal is to decrease inflammation, pulsed ultrasonic with low intensity may be the best choice.

Drug used in Phonophoresis

* The anti-inflammatory drug hydrocortisone has been widely used. High concentration of the drug 10% ointments are more effective when comparing 1% can be driven through the skin with relatively high intensity ultrasonic. Many inflammatory skin conditions have been treated with hydrocortisone.

- * Steroid-type drugs can be applied by phonophoresis as well as many non-steroidal anti-inflammatory drugs mainly salicylates. An anti-inflammatory analgesic cream (trolamine salicylate) has been recommended.
- * Phonophoresis of hydrocortisone has been used in the reactions of many skin conditions including psoriasis, scleroderma, bursitis.
- * A lotion containing zinc oxide, tannic acid, urea and menthol has been applied by phonophoresis to treat herpes simplex virus type II in both oral and genital infections with good results.

* Antibiotics such as penicillin have been given by phonophoresis for the treatment of skin infections.

Applications

The drug to be driven into the tissue is combined in a suitable gel or cream which forms the couplant. It is smeared onto the part using a spatula (an instrument with broad blade for spreading pigments) so that it is not applied by the patient fingers. Treatment head is used onto the skin in a usual manner. After the completion of treatment, the drug should be removed from both the patient's skin and the transducer head.

Because of unnoticeably applied to other patient with same treatment head.

Contraindications

- * Patient who cannot eat sea food should not be treated with iodine. If skin irritation and itching occurs, it should be reported. The usual antidote is an antihistamine. An alternative should be selected in future treatment.
- * Patient sensitive to metals should not be treated with zinc. These patients usually cannot wear metallic watch bands, jewellery, etc. without having skin

reaction and at times, systemic reactions.

Dermatologic consultation should be sought for specific antidotes for offending metals. Nonmetallic substances should be substituted.

* Do not treat a patient with salicylates if he or she is sensitive to aspirin. Seek medical consultation for the specific treatment of symptoms.
